DOCUMENT RESUME

ED 468 755 TM 034 432

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TITLE	An Analysis of Differential Validity and Differential Prediction for Black, Mexican American, Hispanic, and White Law School Students. LSAC Research Report Series.
INSTITUTION	Law School Admission Council, Newtown, PA.
REPORT NO	LSAC-R-90-03
PUB DATE	1990-06-00
NOTE	30p.
PUB TYPE	Numerical/Quantitative Data (110) -- Reports - Research (143)
EDRS PRICE	EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS	Admission (School); Black Students; *College Entrance Examinations; Higher Education; Hispanic American Students; Law Schools; Law Students; Mexican Americans; Minority Groups; *Prediction; *Validity; White Students
IDENTIFIERS	*Law School Admission Test

ABSTRACT

This study was designed to address questions of differential validity and questions of differential prediction in the law school admission process. The former were evaluated by comparing the magnitude of validity coefficients resulting from both simple and multiple correlations between first-year performance in law school and the traditional predictor variables, score on the Law School Admission Test (LSAT), and undergraduate grade-point average. The latter were evaluated by testing the regression systems for the different subgroups. The sample was drawn from the 1986, 1987, and 1988 entering law school classes, using data from 54 law schools, each of which enrolled more than 30 students who identified themselves as Black, Mexican American, or Hispanic American. Validity data do not support the concern that the LSAT score or the traditional combination of LSAT score and undergraduate grade-point average are less valid for any of the minority groups than they are for the white group. The data do suggest one exception: the use of undergraduate grade point average alone as a predictor seems to be significantly less valid for black students than for whites. Results also show that when a regression equation is developed using combined data from white and minority students, the equation tends to overpredict law school performance for minority students. There is nothing in these data to suggest that using the traditional predictors disadvantages minority applicants in the law school admission process. Using a prediction system based only on minorities would present a bleaker picture for minorities, but the data do indicate that over prediction is not true for every applicant. (Contains 16 tables and 14 references.) (SLD)

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An Analysis of Differential Validity and Differential Prediction for Black, Mexican American, Hispanic, and White Law School Students

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Law School Admission Council
Research Report 90-03
June 1990

TM034432

A Publication of Law School Admission Council/Law School Admission Services

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This study was designed to address questions of differential validity and questions of differential prediction in the law school admission process. The former are evaluated by comparing the magnitude of validity coefficients resulting from both simple and multiple correlations between first-year performance in law school and the traditional predictor variables—LSAT score and undergraduate grade-point average. The latter are evaluated by testing the regression systems for the different subgroups.

The sample used in this study is drawn from 1986, 1987, and 1988 entering law school classes, using data that were available from the LSAC-sponsored Correlation Studies. Data from 54 law schools, each of which enrolled 30 or more first-year students who identified themselves as Black, Mexican American, or Hispanic, are analyzed and reported.

The results are presented in four sections: descriptive data about the minority and nonminority first-year students; validity coefficients derived using minorities, nonminorities, and combined groups; results from the Gulliksen and Wilks tests comparing regression systems based on minority and nonminority test takers within each school; and results from applying the prediction equations derived using the total-group data (minority and nonminority first-year students) to minority test takers. These validity data use first-year average in law school as the criterion variable and UGPA alone, LSAT alone, and UGPA and LSAT in combination as predictors.

The validity data do not support the concern that the LSAT score or the traditional combination of LSAT score and undergraduate grade-point average are less valid for any of the minority groups than they are for the white group. The data suggest one exception. The use of UGPA alone as a predictor seems to be significantly less valid for black students than for white students.

Law schools typically evaluate validity by developing prediction equations based on the total group of first-year students. The major question related to this practice is whether use of the combined equation predicts first-year performance for minority students in a systematically biased way. Separate regression systems are developed for each of the three minority groups and are compared with a regression system based on white students from the same institution to determine the reasonableness of using a single equation based on the combination of the two groups. If the slopes, intercepts, and prediction errors are the same for the two separate regression systems, the data can be combined and a single prediction equation can be used for the total group. The results of these tests show few significant differences in slopes between the two groups, but a substantial number of differences in standard errors of estimate and in intercepts. As was true for the earlier studies on this topic, the prediction bias that is a consequence of significantly different slopes and intercepts does not fit the traditional definition of prediction bias. That is, when differences in slope are observed, the differences tend to be greater for white students than for minority students. Likewise, in the majority of cases, the intercept for the white students is larger than the intercept for minority students.

The practical consequence of these differences in slope and intercept are highlighted in the final section of the report, where differences between predicted and actual first-year performance are presented. When a regression equation is developed using combined data from white and minority students, the equation tends to overpredict law school performance for minority students. There is nothing in these data to suggest that using the traditional predictors disadvantages minority law school applicants in the admission process. Indeed, using a prediction system based only on minority student data would present a bleaker picture of minority applicants than is presented using the combined data. However, the data in this study also demonstrate that overprediction is not true for every applicant. Identifying the number of students who are underpredicted, along with the number who are overpredicted, highlights the critical message that admission committees need to continue to evaluate each individual on his or her complete application portfolio.

Despite efforts to increase ethnic and cultural diversity among law school students, and ultimately, within the legal profession, the proportion of black, Mexican American, and Hispanic law students has remained relatively unchanged during recent years. The American Bar Association (1989) reports that the percentage of black first-year law school students has increased modestly from 5.4 to 5.7 from 1985-86 to 1987-88, the percentage of Hispanics has increased from 1.4 to 1.8, and the percentage of Mexican Americans has remained essentially unchanged at approximately 1.5. Nearly ten years earlier, in 1977-78, blacks made up 4.9 percent of the first-year law school classes, Mexican Americans, 1.5 percent, and Hispanics, .6 percent. While the percentage of Hispanic students has tripled during that time period, the total number of Hispanic first-year law students in 1987-88 was only 750.

At the same time, the difference between minority and nonminority performance on the LSAT remains large. The combination of substantial differences in LSAT scores and the underrepresentation of minorities in law school continues to raise questions about the validity of the test for minority test takers and about possible bias in prediction of law-school performance as a consequence of relying in whole or in part on LSAT scores.

Questions about differential validity are questions about whether the correlations between first-year average in law school and one or more predictor variables, such as LSAT score, undergraduate grade-point average, or the combination of the two, are different for different identifiable groups of law-school students. Questions about differential prediction are questions about whether the regression equations to predict first-year average from one or more of the same predictors or predictor combinations are different for the different subgroups of students. Differential prediction is defined in the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 1985) as follows:

> There is differential prediction, and there may be selection bias, if different algorithms (e.g., regression lines) are derived for different groups and if the predictions lead to decisions regarding people from the individual groups that are systematically different from those decisions obtained from the algorithm based on the pooled groups.

Indeed, these questions are not new to LSAC/LSAS–sponsored research nor are they unique to the LSAT or to the law school admission process. Several studies using LSAT data to investigate questions of differential subgroup validity have been sponsored previously by the LSAC (Schrader and Pitcher, 1976a, 1976b; Powers, 1977; Linn and Hastings, 1984). Prediction bias also has been the subject of research studies for other admission-testing programs such as the Scholastic Aptitude Test (Breland, 1979) and the Graduate Management Admission Test (Braun and Jones, 1981). Numerous studies focusing on the same questions in the arena of employment testing have been reported (e.g., Schmidt and Hunter, 1981; Houston and Novick, 1987; National Research Council, 1989). Most of these studies conclude that although there is evidence of differential prediction for minorities, there is no evidence of bias against those groups. That is, the use of the majority regression or the use of the pooled regression model tends to overpredict minority performance on the criterion variable. The study by Houston and Novick cautioned, however, that "to conclude that the use of a pooled regression equation tends to overpredict the criterion performance of blacks can be highly misleading" because minority performance can be underpredicted in the most critical range, such as near the cut score, and yet be overpredicted on the average.

This study was designed to address both questions of differential validity and questions of differential prediction. The former is evaluated by comparing the magnitude of validity coefficients resulting from both simple and multiple correlations between first-year performance in law school and the traditional predictor variables—LSAT score and undergraduate grade-point average. The latter is evaluated by testing the regression systems for the different subgroups.

The present study is at least partially a replication of an earlier study by Powers (1977) that was designed to address the two questions:

1. Do the traditional predictors, undergraduate grade-point average and LSAT score, have differential validity when used to predict law-school performance of minority applicants than when used to predict performance for nonminority applicants?

2. Are either of thse predictors, or a combination of the two, systematically unfair to minority applicants? That is, do they tend to underpredict future law school performance?

The Powers study investigates the performance of two minority groups—blacks and Mexican Americans. These were the only two groups that included sufficiently large sample sizes to allow reliable statistical analyses. That study extends earlier studies of the LSAT by Schrader and Pitcher (1976a, 1976b) by expanding the number of schools in-

cluded in the analyses, by including more representative schools, and by including more recent data. The Powers study analyzes data from students who entered law school in 1973, 1974, and 1975 and includes data from 10 schools that had sufficient numbers of Mexican American students and 29 schools that had sufficient numbers of black students. The present study includes data from Hispanic students as well as from black and Mexican American students. In addition, the present study provides broader representation among law schools, including data from 51 schools that had sufficient numbers of black students, 7 schools that had sufficient Mexican American students, and 13 schools that had sufficient Hispanic students. It is important to replicate the earlier studies not only because the earlier data describe entering classes of 13 years ago, but also because the content and format of the LSAT has changed substantially since those studies were completed. The present study analyzes data from students who entered law school in 1985, 1986, and 1987 and who earned LSAT scores on the version that was reported on the 10 to 48 point scale.

Methods

Sample

The sample used in this study is drawn from 1986, 1987, and 1988 entering law-school classes, using data that were available from the LSAC-sponsored Correlation Studies. The total pool includes approximately 95,693 law school students across three entering classes. The data from the three classes are combined in order to increase the number of records for minority students both to assure stability in the analyses and to increase the representation of law schools.

Data are analyzed separately by law school for each law school that had 30 or more students from at least one of the minority groups of interest. Among the schools that participated in the 1987, 1988, and 1989 Correlation Studies, 51 had 30 or more black students, 13 had 30 or more Hispanic students, and 7 had 30 or more Mexican American students.

LSAT Version

All students whose data are used in this study were tested with the version of the LSAT that includes six 35-minute sections.* Two sections are variable sections that contained material that was used to pretest new questions or pre-equate new test forms. The variable sections do not contribute to the test taker's score. The other four sections contained items designed to measure verbal-reasoning ability. The specific item type make-up is as follows:

Item Type	Number of Items	Time
Reading Comprehension	28	35 minutes
Logical Reasoning	26	35 minutes
Analytical Reasoning	24	35 minutes
Issues and Facts	40	35 minutes

A single LSAT score derived from the sum of the total number of questions answered correctly across the four sections is reported on a scale that ranges from 10 to 48.

Variables Used in the Study

The variables analyzed in this study are those that are currently used in the LSAT Correlation Studies: first-year average (FYA), undergraduate grade-point average (UGPA), and LSAT score. Only students for whom data are available on each of the three variables are included in this study.

First-year Average. This variable is the average grade earned by the student in the first year of law school. First-year average is provided for each student by the individual law schools. Different law schools use different scales for first-year grades. Data analyses were conducted using FYA on the scale in which the school supplied it. In order to maintain the confidentiality of the individual schools and to allow direct comparison across law schools, FYA values were transformed to a scale having a mean of 50 and a standard deviation of 10. Results presented in this report are on the transformed 50/10 scale.

Undergraduate Grade-point Average. The average grade earned by each student during his or her undergraduate study is computed by the Law School Data Assembly Service (LSDAS) or according to LSDAS procedures, following the computing options selected for the undergraduate school the student attended. Grades computed in this manner are expressed on a scale of 0.00 to 4.33. The UGPA used in these studies are the same as

* A revised LSAT that includes four 45-minute sections was introduced in June 1989. First-year averages for test takers who took the revised version will not be available until fall 1991. Those first-year averages will be based on grades earned during the 1990-91 academic year.

those used in the correlation studies carried out for the individual law schools.

LSAT Scores. Only LSAT scores reported on the 10 to 48 score scale are used in this study. For students who present multiple LSAT scores, a single score which is the arithmetic average of the multiple scores is used. If any student took the test more than three times, only the most recent three scores are averaged.

Analysis Methods

This study was undertaken to evaluate the fairness and appropriateness of using LSAT score and undergraduate grade-point average to predict performance in law school for minority students from a single prediction equation developed from data from white students and minority students combined. In other words, the study seeks to find evidence of differential validity or differential prediction for groups of black, Mexican American, Hispanic, or white students and, perhaps more importantly, to determine whether the prediction is biased in a systematic way. The same analyses that are used in the ongoing predictive validity studies for individual schools that participate in the LSAT Correlation Studies are used in this study. That is, least-squares regression analysis is used to predict first-year average from UGPA, from LSAT score, and from the combination of the two. The analyses are carried out using only data from minority test takers, only data from nonminority test takers, and data from the total group (minority and nonminority test takers combined). The analyses are carried out separately by law school using the pooled three-year data. Consequently, the implicit assumption of the validity of pooling data across three years within a single law school so as to achieve stable regressions is necessary for the present study as it is for the Correlation Studies. Additionally, some basic summary statistics (counts, means, and standard deviations) are calculated both within and across schools in order to compare minority with nonminority test takers. Finally, the Gulliksen and Wilks regression tests for several samples (Gulliksen and Wilks, 1950) are applied to these data. Gulliksen and Wilks tests are used to determine whether the minority and nonminority test takers could be regarded as coming from populations with the same regression plane. In other words, can and should the same prediction equations be used with minority test takers as are used for nonminority test takers and can the data from the two groups be combined? This methodology tests for constancy of the standard error of estimate, constancy of slopes of regression lines (or planes), and equality of intercepts of regression planes from sample to sample.

Results

The results from this study are presented in four sections. The first section includes descriptive data about the minority first-year students. Some descriptive data are also presented for nonminority test takers for comparative purposes. Validity coefficients derived using minorities, nonminorities, and combined groups are presented in the second section. Results from the Gulliksen and Wilks tests comparing regression systems based on minority and nonminority test takers within each school are reported in the third section. The results of applying the prediction equations derived using the total group data (minority and nonminority first-year students) to minority test takers are reported in the final section.

Descriptive Statistics

Descriptive statistics for the sample of students within the law schools used in this study are presented in Tables 1 through 6. These data provide information about the proportion of minority test takers and the kinds of law schools represented in different entering classes and they allow comparison of LSAT performance, undergraduate grade-point average (UGPA), and performance in first-year of law school (FYA) between minority and nonminority test takers.

Table 1 shows the overall ethnic subgroup breakdown among all the schools that participated in the Correlation Studies between 1986 and 1988. Of the 95,693 students at the 168 schools represented across the three years, 83,619 (87.4 percent) are white, 4,425 (4.6 percent) are black, 1,778 (1.9 percent) are Hispanic, and 1,113 (1.2 percent) are Mexican American. These percentages of minorities among schools participating in the LSAC Correlation Studies are somewhat smaller than the percentages reported by the American Bar Association (1989) for all law schools. The difference is most dramatic for black students but the reason for this difference is not clear. The ethnic identity used for the Correlation Study data is based on students' self-reported ethnic description code provided on the LSDAS subscription form.

The analyses reported in this study are based on data from 54 of these American Bar Association–approved law schools. The sample includes 51 law schools that meet the sample size requirements for black students, 7 schools that meet the requirements for Mexican American students and 13 schools that meet the requirements for Hispanic students. The samples are obtained by combining data across the 1985-86, 1987-88, and 1987-88 entering classes and include 2,784 black students, 393 Mexican American students, 679 Hispanic students, and 39,916 white students. As in the earlier studies, one goal of the present study is to

analyze data from as large and broad-based a sample as possible. Comparison of the sample sizes with the total number of minority first-year law school students during the time period of this study confirms the success of this goal. The number of black students (2,784) represents 42 percent of the total number of black first-year law students enrolled in 1985-86 through 1987-88 as reported by the ABA. The Powers study includes 32 percent of black first-year students compared against the same base source. The number of Mexican American and Hispanic students (393 and 679) represents 22 percent and 33 percent of the total numbers of Mexican American and Hispanic first-year law students enrolled in those years. These smaller proportions of the total group are largely a consequence of the overall smaller total in the pool. That is, the small number of Hispanic and Mexican American first-year students are spread across a large number of law schools and it is difficult to find large enough samples within individual law schools to allow meaningful analyses. The Powers study includes 31 percent of Mexican American first-year students in the sample, but the minimum sample size allowed in that study is smaller.

Tables 2a, 2b, and 2c provide a listing of each of the law schools that had 30 or more Black, Hispanic, and Mexican American, students, respectively, in their first-year class. The law schools are arranged in descending order according to the percentage of minorities from the subgroup of interest in the first-year class. The percentages for black students range from 84.2 percent for law school number 1 to 3.2 percent for law school number 51. Although the number of law schools represented in the present study is considerably larger than the number represented in the Powers study, the majority of schools still have proportionally very small minority populations. A summary of the number of law schools by size of minority population is shown in Table 3.

The data in Table 3 confirm that the increase in the number of law schools included in the present study primarily is a consequence of identifying more schools that have black, Mexican American, or Hispanic first-year students in the smallest group-size category. The number of schools enrolling 75 or more minorities is not different from that reported by Powers for the 1973-75 first-year classes.

Generalizations from this study require that the included schools represent a broad base of important identifiable characteristics of law schools. In order to facilitate comparison, this study reports the same dimensions that were reported by Powers. Distributions of included law schools by geographic location, average class size, and the proportion of minority students enrolled at each school are shown in Table 4.

As in the Powers study, the schools included in the present study represent a broad range of types and locations of law schools. Two of the schools included in this study are predominately black. Four schools included in this study have more than 20 percent minority enrollment, compared with only three such schools in the Powers study.

Again to permit comparison with the Powers study, selectivity of schools is estimated as a function of mean LSAT score of entrants and proportion of applicants accepted. A cross-tabulation of LSAT mean by proportion accepted for the schools included in this study is shown in Table 5.

By the definition of selectivity proposed for this study, schools falling in the upper left-hand and lower right-hand corners of the table can be thought of as relatively selective and unselective, respectively.

The data presented in these tables suggest that the schools and the students included in this study are broadly representative of the total law school population and that generalizations can be made from these data at least for all minority students in law school who are members of the three subgroups included in this study .

Table 1

Number and Percentage of White, Black, Hispanic, and Mexican American First-year Students Among Schools that Participated in the LSAC Correlation Studies from 1985-86 through 1987-88

Entering Class	Total	Number of Schools	White		Black		Hispanic		Mex. Am.	
			N	%	N	%	N	%	N	%
1985-86	30242	142	26572	87.9	1371	4.5	538	1.8	345	1.1
1986-87	31670	161	27763	87.7	1432	4.5	613	1.9	388	1.2
1987-88	33781	164	29284	86.7	1622	4.8	627	1.9	380	1.1
Pooled data	95693	168	83619	87.4	4425	4.6	1778	1.9	1113	1.2

Table 6a presents means and standard deviations for LSAT score, undergraduate grade-point average, and first-year law school grade-point average, separately for black and white students. These data are shown separately by law school, and they are also pooled across schools. White students tend to outperform black students on each of the predictors, LSAT and UGPA, and on the criterion measure, first-year average in law school. There is only one school at which black students have a higher UGPA than white students (school 2) and there is no school at which black students had as high or higher FYA than white students. There also is no school at which the mean LSAT for black students is as high or higher than it is for white students. The students in these samples are more discrepant in their performance in law school, as reflected in FYA, than they are in their undergraduate performance, as reflected in UGPA. The UGPA for white students differs from that of black students by a half of a stan-

Table 2a

Number and Percentage of Black First-year Students Limited to Law Schools with 30 or More Black Students Pooled Across Three Years (Data from LSAC Correlation Studies 1986-1988)

Law School	Total Number of Students	Number of Black Students	Percentage of Black Students
1	196	165	84.2
2	375	202	53.9
3	455	65	14.3
4	740	97	13.1
5	479	60	12.5
6	563	69	12.3
7	1205	130	10.8
8	486	52	10.7
9	327	33	10.1
10	314	30	9.6
11	637	58	9.1
12	1100	98	8.9
13	479	41	8.6
14	560	47	8.4
15	517	40	7.7
16	505	38	7.5
17	481	36	7.5
18	433	32	7.4
19	1037	76	7.3
20	576	42	7.3
21	1090	79	7.2
22	485	35	7.2
23	527	38	7.2
24	633	45	7.1
25	655	46	7.0
26	907	62	6.8
27	601	41	6.8
28	754	51	6.8
29	652	42	6.4
30	821	52	6.3
31	699	43	6.2
32	532	32	6.0
33	683	40	5.9
34	583	34	5.8
35	661	38	5.7
36	802	46	5.7
37	709	38	5.4
38	754	39	5.2
39	747	37	5.0
40	932	46	4.9
41	736	35	4.8
42	1090	50	4.6
43	1226	55	4.5
44	693	31	4.5
45	865	36	4.2
46	1063	43	4.0
47	1162	47	4.0
48	1335	53	4.0
49	1500	59	3.9
50	1129	39	3.5
51	1294	41	3.2
Pooled data	37785	2784	7.4

Table 2b

Number and Percentage of Hispanic First-year Students Limited to Law Schools with 30 or More Hispanic Students Pooled Across Three Years (Data from LSAC Correlation Studies 1986-1988)

Law School	Total Number of Students	Number of Hispanic Students	Percentage of Hispanic Students
43	1226	210	17.1
52	302	47	15.6
44	693	58	8.4
13	479	36	7.5
6	563	41	7.3
24	633	31	4.9
38	754	31	4.1
26	907	32	3.5
7	1205	41	3.4
50	1129	37	3.3
49	1500	47	3.1
47	1162	36	3.1
46	1063	32	3.0
Pooled data	11616	679	5.8

Table 2c

Number and Percentage of Mexican American First-year Students Limited to Law Schools with 30 or More Mexican American Students Pooled Across Three Years (Data from LSAC Correlation Studies 1986-1988)

Law School	Total Number of Students	Number of Mexican American Students	Percentage of Mexican American Students
2	375	59	15.7
49	1500	132	8.8
53	689	58	8.4
48	1335	47	3.5
46	1063	34	3.2
21	1090	31	2.8
54	1140	32	2.8
Pooled data	7192	393	5.5

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dard deviation or less at 12 of the 51 schools. This is true for FYA at only three schools. The pooled mean undergraduate grade-point average of white students exceeds that of blacks by only .4, which is .95 of a standard deviation difference, while the pooled FYA differs by 11.66 or approximately 1.25 standard deviation units. The same summary statistics are presented for Hispanics and Mexican Americans in Tables 6b and 6c. A similar pattern of UGPA and FYA differences is observed for each of these two groups, but the discrepancies are not so large for either of these groups as it is for blacks. The reason for these differences may deserve further exploration.

Table 3

A Summary of the Number of Included Law Schools by Size of Minority Group

Minority Group	Size of Group				
	30-49	50-74	75-99	100 or more	Total
Black	32	12	4	3	1
Hispanic	11	1	0	1	13
Mex. Am.	4	2	0	1	7

Validity Data

Validity coefficients are examined in this section for evidence of differential validity between minority and nonminority students. Tables 7 through 11 show validity data separately for white, black, Hispanic, and Mexican American law students.

The validity coefficients are the correlations of first-year average with one or more predictor variables. The simple correlations of first-year grades in law school with UGPA alone and with LSAT alone are shown in Tables 7a, 7b, and 7c separately for black, white, Mexican American, and Hispanic students at each of the 54 law schools. Multiple correlations for UGPA and LSAT with first-year average are also shown.

The simple correlation between FYA and LSAT is higher for blacks only (28 schools) slightly more frequently than for whites only (22 schools). The

Table 4

Distribution of Included Law Schools with Respect to Geographic Location, Class Size, and Proportion of Minority Students

Geographic Location	N	Average Class Size	N	Percent Minority Enrollment	N
West	5	fewer than 200	20	less than 5	1
Midwest	6	200-300	19	5-10	32
South	8	more than 300	15	11-20	17
Southeast	15			greater than 20	4
Northeast	20				
Total Schools	54		54		54

Table 5

Selectivity of Law Schools with Thirty or More Minority Students Pooled Across Three Years

LSAT Mean	Proportion Accepted*					
	Less than 10%	10-19%	20-29%	30-39%	40 or more %	Total
42-48	0	3	0	0	0	3
35-41	0	3	12	8	3	26
28-34	0	0	0	7	17	24
20-27	0	0	0	0	1	1
Total	0	6	12	15	21	54

* Source: Law Services Candidate Referral Service 1987-88

Table 6a

Means and Standard Deviations of LSAT, UGPA, and FYA for Whites and Blacks

Law School	Whites						Blacks					
	LSAT		UGPA		FYA*		LSAT		UGPA		FYA*	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1	25.3	3.6	2.8	0.4	52.7	11.0	22.8	5.0	2.7	0.4	49.6	10.0
2	26.1	4.7	2.6	0.4	55.0	9.7	19.2	4.7	2.7	0.5	47.9	10.2
3	37.0	3.9	3.2	0.4	52.5	8.2	27.0	3.6	2.8	0.4	36.0	7.5
4	35.2	4.7	3.2	0.4	51.9	8.9	27.1	4.4	2.9	0.5	40.3	9.9
5	34.0	3.9	3.0	0.4	51.1	9.6	27.9	4.6	2.8	0.4	42.7	9.3
6	38.0	4.2	3.3	0.4	53.2	8.7	26.9	5.0	2.9	0.4	40.2	7.2
7	39.1	4.1	3.4	0.3	52.4	8.4	28.6	4.7	2.9	0.4	36.6	8.7
8	28.8	4.6	2.8	0.4	51.0	9.7	24.8	4.3	2.6	0.4	45.0	9.5
9	40.4	2.9	3.6	0.2	53.9	8.2	32.1	3.9	2.9	0.4	37.9	7.4
10	29.8	5.0	2.9	0.5	51.2	9.6	19.3	4.3	2.8	0.5	40.4	9.0
11	38.4	3.5	3.4	0.3	51.2	9.4	30.1	4.5	2.9	0.4	38.4	8.2
12	40.7	3.4	3.5	0.3	51.6	8.5	30.4	4.8	3.0	0.3	34.0	9.5
13	36.1	4.2	3.3	0.4	51.9	9.2	25.9	4.8	2.9	0.4	38.2	7.9
14	37.7	3.8	3.4	0.3	51.3	9.2	25.5	4.2	2.9	0.4	38.4	10.7
15	38.8	3.2	3.3	0.3	51.5	8.9	27.3	4.0	2.7	0.4	33.7	8.5
16	30.6	5.2	3.1	0.4	51.3	9.4	22.9	4.6	2.6	0.4	38.7	8.3
17	43.4	2.9	3.7	0.2	52.7	8.9	38.4	2.9	3.2	0.3	38.7	8.1
18	33.5	4.4	3.2	0.4	50.9	9.5	24.8	3.4	2.9	0.4	38.7	8.8
19	33.4	4.9	3.2	0.3	51.1	9.4	26.8	5.2	2.9	0.4	39.8	11.1
20	36.1	4.1	3.3	0.3	51.0	9.6	27.4	4.3	3.0	0.4	40.0	8.8
21	42.3	2.5	3.6	0.2	52.0	8.3	34.2	4.6	3.0	0.3	35.5	10.3
22	34.0	4.2	3.1	0.4	51.2	9.1	21.7	3.9	3.0	0.3	36.4	9.9
23	44.1	2.6	3.7	0.2	51.8	9.1	36.6	3.1	3.3	0.3	36.8	6.9
24	41.4	2.8	3.6	0.3	52.1	9.1	30.6	4.9	3.1	0.3	36.7	5.5
25	34.2	4.6	3.1	0.4	51.2	9.4	25.2	4.0	2.7	0.4	37.2	7.1
26	41.4	3.4	3.7	0.2	52.0	8.7	34.0	3.9	3.1	0.4	36.7	8.6
27	36.9	3.6	3.4	0.3	51.3	9.5	26.7	3.9	2.9	0.4	37.7	7.1
28	31.6	4.6	2.9	0.4	51.0	9.4	23.2	4.8	2.6	0.4	38.5	9.4
29	34.1	4.3	3.1	0.4	50.9	9.6	23.5	5.1	2.8	0.4	37.8	8.9
30	34.0	3.7	3.0	0.4	51.2	9.6	25.0	4.6	2.6	0.4	38.1	8.0
31	33.3	4.4	3.0	0.4	50.7	9.8	28.3	4.1	2.5	0.4	41.5	9.4
32	40.9	2.6	3.5	0.2	52.2	8.2	32.1	2.4	3.0	0.4	31.6	8.1
33	36.0	4.3	3.3	0.3	50.7	9.6	27.2	4.4	2.8	0.4	39.2	7.7
34	37.4	3.5	3.3	0.3	50.8	9.4	27.0	4.7	2.9	0.4	36.2	8.3
35	35.5	4.1	3.4	0.3	51.5	9.1	25.3	4.9	2.8	0.3	36.7	7.7
36	30.1	5.3	2.9	0.4	50.7	9.7	21.9	5.2	2.7	0.4	41.1	10.7
37	34.7	4.2	3.1	0.4	50.9	9.4	25.9	6.4	2.7	0.3	38.0	9.8
38	38.7	3.4	3.4	0.3	52.6	8.2	25.7	6.1	2.8	0.4	35.0	10.0
39	41.5	2.8	3.6	0.2	51.5	9.2	31.1	4.7	3.2	0.3	36.3	8.5
40	26.9	5.9	2.7	0.4	50.4	10.0	21.0	6.2	2.5	0.4	44.5	9.0
41	32.6	4.9	3.1	0.4	51.0	9.5	23.4	5.2	2.6	0.4	37.7	8.5
42	33.6	3.4	3.0	0.3	50.9	9.7	29.0	4.8	2.9	0.3	41.0	10.0
43	33.6	4.8	3.1	0.4	50.7	9.8	25.2	5.3	3.0	0.4	40.8	8.9
44	30.0	4.4	2.9	0.4	51.2	9.5	23.5	5.2	2.8	0.4	38.9	12.3
45	35.6	3.9	3.2	0.3	51.5	8.8	26.1	5.2	2.9	0.4	36.5	12.0
46	30.7	4.9	2.9	0.4	50.8	10.1	27.0	3.8	2.7	0.3	45.2	7.2
47	34.9	3.8	3.1	0.4	50.8	9.6	28.3	4.3	2.8	0.4	41.9	8.9
48	38.6	3.8	3.4	0.3	52.4	8.6	27.5	6.5	2.8	0.4	38.1	9.1
49	39.6	3.1	3.5	0.3	52.0	8.9	31.2	4.0	3.0	0.3	36.6	8.2
50	31.3	4.5	3.1	0.4	51.0	9.5	18.9	4.1	2.7	0.4	37.2	10.3
51	37.9	2.9	3.4	0.2	50.8	9.6	30.5	3.9	3.0	0.3	37.6	7.5
Pooled data	35.8	5.7	3.2	0.4	51.4	9.3	26.6	6.2	2.8	0.4	39.7	10.0

* First-year average has been converted to a mean of 50 and a s.d. of 10 for the total group at each school.

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correlations for the two separate groups are identical for one school. Likewise, the simple correlation is higher for Hispanics only (8 schools) more frequently than for whites only (4 schools) and higher for Mexican Americans only (3 schools) about as often as for whites only (4 schools). The correlations are equal for one school in the Hispanic group. The pattern is different for UGPA. The simple correlation between FYA and UGPA is higher for whites only (35 schools) much more frequently than for blacks only (16 schools); it is higher for Hispanics only (9 schools) more frequently than for whites only (4 schools); and it is about equally distributed for Mexican Americans (4 schools higher) and whites (3 schools higher).

The validities for the combination of predictors (LSAT and UGPA) again show a tendency for higher validities for minorities than for nonminorities. The multiple correlation between FYA and the combination of LSAT and UGPA is higher for blacks only (28 schools) slightly more frequently than for whites only (23 schools). Likewise, the multiple correlation is higher for Mexican Americans only (10 schools) more frequently than for whites only (3 schools) and higher for Mexican Americans only (3 schools) about as often as for whites only (4 schools). The data in Tables 7a, 7b, and 7c also show that using the two predictors in combination results in higher validity than using either predictor alone.

Table 6b

Means and Standard Deviations of LSAT, UGPA, and FYA for Whites and Hispanics

	Whites						Hispanics					
Law	LSAT		UGPA		FYA*		LSAT		UGPA		FYA*	
School	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
6	38.0	4.2	3.3	0.4	53.2	8.7	29.6	5.6	3.1	0.3	42.8	7.7
7	39.1	4.1	3.4	0.3	52.4	8.4	35.4	4.5	3.4	0.3	44.9	10.5
13	36.1	4.2	3.3	0.4	51.9	9.2	30.9	4.2	3.3	0.4	44.6	9.3
24	41.4	2.8	3.6	0.3	52.1	9.1	35.7	3.4	3.4	0.3	41.6	8.3
26	41.4	3.4	3.7	0.2	52.0	8.7	36.9	4.0	3.5	0.2	44.7	9.9
38	38.7	3.4	3.4	0.3	52.6	8.2	32.3	6.2	3.1	0.4	44.5	10.0
43	33.5	4.8	3.1	0.4	50.7	9.8	32.4	4.7	3.3	0.4	50.4	9.8
44	30.0	4.4	2.9	0.4	51.2	9.5	27.2	4.6	2.9	0.4	44.6	9.7
46	30.7	4.9	2.9	0.4	50.8	10.1	29.2	4.6	2.8	0.4	47.8	11.3
47	34.9	3.8	3.1	0.4	50.8	9.6	30.5	4.0	3.1	0.4	48.0	10.6
49	39.6	3.1	3.5	0.3	52.0	8.9	34.5	5.1	3.3	0.3	42.9	10.0
50	31.3	4.5	3.1	0.4	51.0	9.5	24.0	7.1	3.0	0.4	44.0	11.3
52	36.5	4.5	3.2	0.4	52.8	9.6	31.4	5.3	3.1	0.4	46.9	8.2
Pooled data	36.0	5.6	3.3	0.4	51.6	9.2	31.6	5.7	3.2	0.4	46.5	10.1

Table 6c

Means and Standard Deviations of LSAT, UGPA, and FYA for Whites and Mexican Americans

	Whites						Mexican Americans					
Law	LSAT		UGPA		FYA*		LSAT		UGPA		FYA*	
School	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
2	26.1	4.7	2.6	0.4	55.0	9.7	20.5	4.6	2.6	0.4	51.2	9.3
21	42.3	2.5	3.6	0.2	52.0	8.3	34.5	4.1	3.2	0.4	36.9	12.0
46	30.7	4.9	2.9	0.4	50.8	10.1	27.5	5.9	2.8	0.4	43.1	8.2
48	38.6	3.8	3.4	0.3	52.4	8.6	28.4	5.6	3.0	0.3	38.0	9.7
49	39.6	3.1	3.5	0.3	52.0	8.9	32.7	4.1	3.2	0.4	40.4	9.0
53	30.9	4.6	2.9	0.4	50.8	9.8	28.0	3.1	2.9	0.3	45.6	8.9
54	35.2	3.7	3.2	0.3	50.6	10.1	31.5	4.5	3.1	0.3	45.8	8.2
Pooled data	36.7	5.7	3.3	0.4	51.6	9.3	29.2	6.2	3.0	0.4	42.9	10.2

Table 7a

Validity of LSAT and UGPA for Predicting FYA for White and Black Students

Law School	White Students Only			Black Students Only		
	LSAT alone	UGPA alone	UGPA, LSAT	LSAT alone	UGPA alone	UGPA, LSAT
1	0.42	0.30	0.54	0.12	0.22	0.29
2	0.34	0.37	0.56	0.29	0.20	0.41
3	0.28	0.14	0.36	0.18	0.09	0.26
4	0.38	0.28	0.49	0.37	0.20	0.48
5	0.26	0.28	0.40	0.34	-0.02	0.34
6	0.40	0.13	0.46	0.35	-0.01	0.38
7	0.39	0.19	0.45	0.42	0.10	0.47
8	0.33	0.22	0.41	0.36	0.15	0.43
9	0.38	0.11	0.39	0.57	0.14	0.57
10	0.48	0.34	0.56	0.17	0.54	0.57
11	0.29	0.20	0.40	0.30	0.14	0.36
12	0.34	0.19	0.41	0.27	-0.03	0.28
13	0.29	0.11	0.37	0.51	0.24	0.64
14	0.25	0.16	0.33	0.36	0.17	0.42
15	0.15	0.13	0.26	0.06	-0.01	0.06
16	0.41	0.28	0.52	0.32	0.41	0.53
17	0.33	0.20	0.37	0.12	0.42	0.44
18	0.27	0.12	0.36	0.71	0.15	0.73
19	0.36	0.18	0.42	0.43	0.04	0.44
20	0.12	0.20	0.28	0.35	0.15	0.45
21	0.28	0.14	0.36	0.52	0.20	0.59
22	0.26	0.34	0.46	0.10	0.29	0.32
23	0.25	0.11	0.29	0.32	0.27	0.46
24	0.15	0.18	0.30	0.35	-0.13	0.35
25	0.46	0.31	0.53	0.26	0.37	0.43
26	0.33	-0.01	0.33	0.07	-0.03	0.07
27	0.21	0.19	0.35	0.27	0.51	0.62
28	0.24	0.20	0.34	0.13	0.16	0.23
29	0.36	0.20	0.45	0.33	0.36	0.47
30	0.28	0.16	0.37	0.29	0.17	0.35
31	0.40	0.23	0.48	0.25	0.19	0.30
32	0.21	0.05	0.25	0.58	-0.23	0.58
33	0.26	0.18	0.38	0.38	0.04	0.40
34	0.31	0.23	0.40	0.23	0.04	0.25
35	0.37	0.25	0.49	0.56	0.06	0.57
36	0.41	0.33	0.51	0.30	0.09	0.38
37	0.32	0.19	0.39	0.65	-0.04	0.65
38	0.26	0.15	0.34	0.47	0.13	0.51
39	0.19	-0.09	0.19	-0.07	-0.21	0.29
40	0.40	0.27	0.46	0.40	-0.14	0.40
41	0.38	0.27	0.48	0.43	-0.10	0.43
42	0.33	0.20	0.39	0.10	-0.01	0.10
43	0.38	0.26	0.49	0.61	0.12	0.67
44	0.27	0.19	0.36	0.50	0.30	0.59
45	0.16	0.04	0.20	0.20	-0.06	0.21
46	0.41	0.22	0.47	0.15	0.06	0.19
47	0.27	0.22	0.36	0.52	0.05	0.52
48	0.29	0.07	0.34	0.48	-0.30	0.48
49	0.24	0.16	0.35	0.25	-0.23	0.28
50	0.37	0.20	0.43	0.18	0.28	0.33
51	0.26	0.10	0.30	0.46	0.20	0.57

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The overall trend for validities across schools is summarized in Table 8. When LSAT score alone or LSAT score in combination with undergraduate grade-point average is used to predict performance in first year of law school, the validity coefficients for both black and Hispanic students tend to be larger than for white students in the majority of the analyses, although the magnitude of the differences are not statistically significant. The tendency for larger validity coefficients between Mexican Americans and whites is about equal. Undergraduate grade-point average alone tends to be a more valid predictor for whites than for blacks and a statistical sign test (Dixon and Mood, 1946) confirms that the more frequent observation of larger validity coefficients for whites is statistically significant. This overall trend of better prediction is the same as was reported by Powers.

Consistent with the data reported in Tables 7a, 7b, 7c, and 8, the median validity coefficients shown in Table 9 show that the median validity coefficient is larger for blacks and Hispanics than for whites for either LSAT score as a single predictor or for the combination of the two predictors.

The data continue to confirm that undergraduate grade-point average is a less valid predictor for black students. There is nothing in these data to support a concern that LSAT alone or the combination of the LSAT score and undergraduate grade-point average are less valid for minority students than for nonminority students. These results are consistent with those reported by Powers.

As was suggested in the Powers study, the tendency toward lower validities for white students than for minority students may be at least partially attributable to differential range restriction. The amount of variability of each variable can be assessed by examining the standard deviations that are presented in Table 6. The data within each school as well as the data combined across schools suggest greater variability for each minority group than for the white group on the LSAT. Application of a statistical sign test confirms that this tendency

Table 7b

Validity of LSAT and UGPA for Predicting FYA for White and Hispanic Students

	White Students Only			Hispanic Students Only		
Law School	LSAT alone	UGPA alone	LSAT, UGPA	LSAT alone	UGPA alone	LSAT, UGPA
6	0.40	0.13	0.46	0.53	0.07	0.55
7	0.39	0.19	0.45	0.31	0.28	0.41
13	0.29	0.11	0.37	0.15	0.41	0.49
24	0.15	0.18	0.30	0.63	0.09	0.68
26	0.33	-0.01	0.33	0.36	0.56	0.64
38	0.26	0.15	0.34	0.49	0.26	0.64
43	0.38	0.26	0.49	0.43	0.30	0.55
44	0.27	0.19	0.36	0.14	0.03	0.16
46	0.41	0.22	0.47	0.37	0.50	0.65
47	0.27	0.22	0.36	0.32	0.38	0.47
49	0.24	0.16	0.35	0.60	0.38	0.67
50	0.37	0.20	0.43	0.53	0.53	0.66
52	0.51	0.26	0.59	0.51	0.22	0.57

Table 7c

Validity of LSAT and UGPA for Predicting FYA for White and Mexican American Students

	White Students Only			Mexican American Students Only		
Law School	LSAT alone	UGPA alone	LSAT, UGPA	LSAT alone	UGPA alone	LSAT, UGPA
2	0.34	0.37	0.56	0.11	0.10	0.17
21	0.28	0.14	0.36	0.57	0.53	0.67
46	0.41	0.22	0.47	0.24	0.25	0.34
48	0.29	0.07	0.34	0.40	0.13	0.46
49	0.24	0.16	0.35	0.30	0.20	0.39
53	0.23	0.25	0.37	0.12	0.24	0.30
54	0.25	0.16	0.35	0.23	-0.04	0.24

is statistically significant for all groups for LSAT score and for blacks for UGPA.

An alternative method of assessing differential range restriction effects is to compare the magnitude of raw regression weights between the two groups of interest. Raw regression weights are not affected by restriction of range. The raw regression weights for LSAT alone, UGPA alone, and LSAT and UGPA in combination are shown for each group separately by law school in Table 10 and are summarized in Table 11.

Consistent with the results reported by Powers, undergraduate grades tend to receive higher weights for white students more frequently than for black students, but LSAT score tends to receive higher weight for the white groups about as often as for the black, Hispanic, or Mexican American group. The pattern holds regardless of whether the predictors are considered alone or in combination. Again, a sign test was used to test for statistically significant frequency differences. Only the frequency with which the raw regression weights for undergraduate grade-point average, alone and in combination, are larger for whites than for blacks is statistically different from zero.

Gulliksen-Wilks Tests of Regression Systems

The results from the Gulliksen and Wilks regression tests for black and white students, for Hispanic and white students, and for Mexican American and white students are shown in Tables 12a, 12b, and 12c and in Figures 1 through 3.

In each set of tests, UGPA and LSAT are used to predict FYA. An analysis of variance technique that can be derived from the Neyman-Pearson likelihood ratio test theory is used to test three hypotheses: equality of errors of estimate, of slopes, and of intercepts (H_a, H_b, and H_c.) The regression tests are repeated for each predictor (LSAT and UGPA) alone and in combination (LSAT and UGPA), yielding three comparisons for each school for each subgroup.

H_a represents the hypothesis that the population standard errors of estimate are all equal regardless of the values of the slope and intercept of the regression line or plane. H_b represents the hypothesis that the slopes of the regression lines (planes) are equal regardless of the values of the intercepts. The test for H_b assumes that H_a is true. Finally, H_c represents the hypotheses that the regression intercepts are equal, assuming H_b is true. Hypotheses tested subsequent to a prerequisite hypothesis that is not true are shown in parentheses since the results from such tests are ambiguous. Results from ambiguous tests are not included in the figures.

A total of 153 black/white comparisons are made for the 51 law schools; 39 Hispanic/white comparisons for the 13 law schools; and 21 Mexican American/white comparisons for the 7 law schools.

Table 8

Comparison of Validity Coefficients for White, Black, Hispanic, and Mexican American Subgroups

	Number of schools in which validity coefficient was larger for:								
Predictor(s)	Whites	Blacks	Sig.*	Whites	Hispanics	Sig.*	Whites	Mex. Am.s	Sig.*
LSAT	22	28	n.s.	4	8	n.s.	4	3	n.s.
UGPA	35	16	p<.05	4	9	n.s.	3	4	n.s.
LSAT, UGPA	23	28	n.s.	3	10	n.s.	4	3	n.s.

* Source: Statistical Sign Test (Dixon & Mood, 1946)

Table 9

Median Validity Coefficients for White, Black, Hispanic, and Mexican American Subgroups

Predictor(s)	Whites	Blacks	Whites	Hispanics	Whites	Mex. Am.s
LSAT	0.31	0.33	0.33	0.43	0.28	0.24
UGPA	0.19	0.13	0.19	0.30	0.16	0.20
LSAT, UGPA	0.39	0.43	0.37	0.57	0.36	0.34
Total Schools	51	51	13	13	7	7

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Table 10

Raw Regression Weights and Intercepts for LSAT Alone

Law School	Regression Weight				Intercept			
	White	Black	Hispanic	Mex. Am.	White	Black	Hispanic	Mex. Am.
1	0.82	0.25			31.90	43.92		
2	0.70	0.63		0.22	36.71	35.83		46.66
3	0.59	0.38			30.73	25.72		
4	0.72	0.84			26.61	17.70		
5	0.63	0.70			29.67	23.18		
6	0.84	0.50	0.73		21.39	26.77	21.38	
7	0.80	0.79	0.71		21.20	13.99	19.73	
8	0.68	0.82			31.37	24.77		
9	1.08		0.78		13.51		22.46	
10	0.92	0.36			23.92	33.48		
11	0.78	0.54			21.36	22.09		
12	0.85	0.55			16.92	17.45		
13	0.63	0.84	0.33		29.17	16.45	34.57	
14	0.61	0.93			28.15	14.75		
15	0.43	0.13			34.82	30.03		
16	0.75	0.57			28.50	25.62		
17	1.03	0.34			8.07	25.76		
18	0.58	1.82			31.49	-6.40		
19	0.68	0.92			28.35	15.35		
20	0.28	0.72			40.78	20.15		
21	0.95	1.17		1.66	11.91	-4.59		-20.29
22	0.57	0.24			31.86	31.09		
23	0.88	0.70			13.24	11.04		
24	0.50	0.40	1.54		31.44	24.58	-13.51	
25	0.95	0.46			18.73	25.58		
26	0.83	0.17	0.90		17.84	31.09	11.50	
27	0.56	0.49			30.52	24.63		
28	0.49	0.25			35.56	32.67		
29	0.78	0.45			24.23	26.98		
30	0.72	0.51			26.88	25.32		
31	0.89	0.58			21.04	25.17		
32	0.68	1.90			24.49	-29.45		
33	0.59	0.67			29.39	20.99		
34	0.83	0.40			19.71	25.54		
35	0.50			0.35	35.46			35.75
36	0.74	0.62			28.31	27.66		
37	0.72	1.00			26.10	12.09		
38	0.63	0.78	0.80		28.33	14.81	18.83	
39	0.61	-0.13			26.04	40.44		
40	0.67	0.57			32.36	32.50		
41	0.72	0.69			27.41	21.53		
42	0.93	0.21			19.69	34.89		
43	0.79	1.04	0.88		24.33	14.66	21.82	
44	0.58	1.19	0.30		33.71	10.88	36.45	
45	0.36	0.46			38.74	24.58		
46	0.85	0.28	0.91	0.34	24.65	37.51	21.11	33.75
47	0.67	1.08	0.85		27.40	11.24	21.97	
48	0.65	0.67		0.69	27.20	19.80		18.50
49	0.70	0.51	1.19	0.66	24.14	20.86	1.92	18.87
50	0.77	0.46	0.84		26.76	28.52	23.87	
51	0.86	0.89			18.30	10.62		
52	0.67			0.43	27.07			32.33
53	1.02	1.10			12.89	2.74		
54	0.83	0.89			22.15	14.35		

(table continues)

Table 10 (cont.)

Raw Regression Weights and Intercepts for UGPA Alone

Law School	Regression Weight				Intercept			
	White	Black	Hispanic	Mex. Am.	White	Black	Hispanic	Mex. Am.
1	8.79	5.63			28.24	34.17		
2	9.76	4.43		2.24	29.38	36.12		45.37
3	3.08	1.76			42.59	31.08		
4	5.92	4.12			33.22	28.24		
5	6.60	-0.43			31.20	43.91		
6	3.03	-0.30	2.03		43.31	41.11	36.53	
7	4.94	2.24	9.72		35.48	30.07	12.14	
8	5.48	3.47			35.42	35.82		
9	4.65	2.44			37.33	30.84		
10	6.63	10.35			32.22	10.99		
11	6.07	3.12			30.56	29.35		
12	5.95	-0.83			30.53	36.55		
13	2.52	4.25	10.42		43.61	25.69	10.57	
14	4.53	4.18			36.00	26.36		
15	3.53	-0.16			39.94	34.09		
16	6.35	9.03			31.64	15.16		
17	7.86	10.12			23.88	6.20		
18	2.88	3.05			41.59	29.80		
19	4.34	1.08			37.15	36.72		
20	5.88	3.40			31.87	29.84		
21	5.16	5.84		16.48	33.58	18.05		-46.29
22	7.89	8.36			26.38	11.37		
23	5.27	5.88			32.13	17.55		
24	6.28	-2.33	2.16		29.77	44.06	34.35	
25	7.74	7.16			27.02	18.19		
26	-0.35	-0.72	23.03		53.33	38.93	-35.07	
27	5.70	9.56			32.09	9.70		
28	4.94	3.66			36.48	28.96		
29	4.29	6.30			37.48	19.97		
30	4.34	3.42			38.16	29.23		
31	5.72	4.13			33.61	31.02		
32	1.76	-4.68			46.11	45.48		
33	5.28	0.73			33.47	37.18		
34	6.69	1.02			28.57	33.27		
35	5.98			6.50	33.58			26.94
36	7.89	2.79			27.42	33.49		
37	5.00	-1.35			35.17	41.61		
38	4.01	3.58	7.47		39.05	24.95	21.30	
39	-3.87	-5.69			65.26	54.56		
40	6.41	-3.24			32.91	52.57		
41	6.83	-2.20			30.14	43.49		
42	5.59	-0.28			34.41	41.76		
43	5.91	2.66	8.05		32.34	32.96	24.08	
44	4.50	8.86	0.63		38.25	14.47	42.83	
45	1.11	-1.88			47.91	42.02		
46	5.44	1.37	14.09	5.94	35.17	41.48	8.92	18.69
47	6.02	1.02	9.71		32.11	39.03	17.86	
48	2.30	-6.80		4.30	44.54	56.97		-6.24
49	4.95	-5.59	11.03	4.76	34.57	53.43	6.95	25.40
50	5.21	7.38	15.05		34.74	17.67	-1.77	
51	4.03	4.34			37.35	24.52		
52	5.05			-1.10	34.62			26.01
53	7.00		4.15		30.22		33.84	
54	7.17	1.53			26.98	32.49		

(table continues)

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Table 10 (cont.)

Raw Regression Weights and Intercepts for LSAT and UGPA in Combination

Law School	Regression Weight (LSAT)				Regression Weight (UGPA)				Intercept			
	White	Black	Hispanic	Mex. Am.	White	Black	Hispanic	Mex. Am.	White	Black	Hispanic	Mex. Am.
1	0.87	0.41			9.85	7.25			3.18	20.34		
2	0.90	0.81		0.30	12.27	6.80		3.15	-0.75	14.19		36.91
3	0.76	0.58			5.56	4.11			6.64	9.00		
4	0.75	1.03			6.34	6.53			5.59	-6.56		
5	0.71	0.70			7.38	0.05			4.55	23.05		
6	0.93	0.60	0.75		5.02	3.40	3.88		1.52	14.31	8.65	
7	0.83	0.87	0.70		5.60	4.40	9.56		0.89	-1.27	-12.20	
8	0.72	0.92			6.16	5.25			12.66	8.39		
9	1.13		0.81		8.28		5.01		-15.29		5.64	
10	0.87	0.44			5.82	10.62			8.75	1.79		
11	0.97	0.61			8.73	4.43			-15.64	7.36		
12	0.93	0.59			7.40	1.90			-12.36	10.38		
13	0.83	1.00	0.61		5.84	6.84	12.28		2.69	-7.67	-14.33	
14	0.73	1.01			6.38	5.57			2.12	-3.28		
15	0.69	0.15			6.24	0.42			4.19	28.53		
16	0.80	0.62			7.25	9.47			4.44	-0.08		
17	0.98	0.40			6.56	10.30			-13.76	-9.79		
18	0.81	1.85			6.56	4.08			2.64	-19.19		
19	0.75	0.94			5.97	2.57			6.96	7.23		
20	0.48	0.95			7.80	7.09			7.94	-7.14		
21	1.16	1.27		1.29	8.58	8.31		11.98	-27.59	-32.60		-46.29
22	0.68	0.37			8.82	9.06			0.44	1.17		
23	0.94	0.81			6.81	7.12			-14.98	-16.22		
24	0.85	0.41	1.69		9.73	0.39	6.27		-17.63	23.03	-39.95	
25	0.89	0.41			6.65	6.75			-0.15	9.03		
26	0.86	0.16	0.78		2.63	-0.15	21.89		6.84	31.70	-59.94	
27	0.81	0.64			8.73	10.56			-7.85	-10.34		
28	0.57	0.34			6.00	4.53			15.43	18.84		
29	0.90	0.42			5.97	5.88			1.60	11.37		
30	0.90	0.53			6.86	3.81			0.10	14.91		
31	0.93	0.54			6.44	3.73			0.57	16.62		
32	0.84	1.86			5.42	-0.71			-0.81	-26.13		
33	0.80	0.71			8.53	2.20			-5.88	13.90		
34	0.89	0.46			7.53	2.90			-7.72	15.32		
35	0.60			0.52	7.07			7.53	11.87			9.37
36	0.71	0.81			7.35	7.34			7.69	3.24		
37	0.76	1.01			5.72	1.30			6.73	8.43		
38	0.76	0.81	0.98		6.11	4.97	12.06		2.49	0.17	-24.53	
39	0.60	0.39			-0.54	-8.28			28.65	75.01		
40	0.63	0.57			5.53	-0.24			18.31	33.19		
41	0.76	0.68			7.53	-0.64			3.09	23.40		
42	0.96	0.23			6.05	0.79			0.80	32.04		
43	0.86	1.15	0.96		7.06	6.00	9.42		-0.12	-5.88	-11.54	
44	0.66	1.21	0.36		5.52	9.17	2.12		15.68	-14.75	28.69	
45	0.52	0.59			4.30	3.15			19.20	11.76		
46	0.86	0.35	1.01	0.32	5.69	2.56	14.98	5.62	7.93	28.75	-23.03	18.69
47	0.71	1.09	0.72		6.57	1.18	8.64		5.48	7.84	-0.66	
48	0.78	0.64		0.77	6.04	-0.79		7.47	44.54	22.75		-6.24
49	0.93	0.36	1.10	0.74	7.94	-3.35	8.76	6.00	-12.78	35.39	-23.78	-2.76
50	0.80	0.42	0.66		5.84	7.17	11.72		7.67	10.19	-7.40	
51	0.96	1.09			6.13	7.95			-5.93	-19.68		
52	0.88			0.47	8.20			1.52	-6.21			26.01
53	1.07	1.08			6.40	1.05			-12.02	0.20		
54	0.95	0.89			9.27	2.25			-13.89	7.93		

The regression systems are found to be significantly different in 130 of the 153 black/white analyses. Standard errors of estimate are significantly different (p.05) in nearly one- third (49) of the 153 black/white comparisons. Only 19 of the unambiguous tests of slope and four of the ambiguous tests show significant differences. However, 62 of the 85 unambiguous and 55 of the 68 ambiguous tests of intercept differences yield significant results. As was the case for previous studies of differential prediction of law school grades for minority and nonminority test takers, the analysis results show relatively few slope differences, but a substantial number of differences in intercepts. For the data in the present study, as in previous studies, the errors of prediction are not different for blacks than for whites, but even after adjusting for differences in predictors, black law school students earn significantly lower first-year averages than white students at most law schools.

Tables 12b and 12c and Figures 2 and 3 show similar results for Mexican American/white and Hispanic/white comparisons. Six of the 39 comparisons revealed significant differences in standard errors, five of the unambiguous and one ambiguous test of slopes are significant, and 13 of the unambiguous and six of the ambiguous tests of intercepts are significant for Hispanic/white comparisons. One of the 21 comparisons shows significantly different standard errors of estimate, two show significantly different slopes, and 14 of the 18 unambiguous and two of the three ambiguous tests for intercept differences are significant for Mexican American/white comparisons.

The number of significant differences with respect to standard errors of estimate is slightly higher than is typically reported in similar studies of differential prediction (Houston and Novick, 1987; Linn, 1982) and is slightly greater than that reported in the Powers study (31 percent compared with 27 percent.) The standard errors of estimate from predicting first-year average grades in law school from LSAT alone, UGPA alone, and LSAT and UGPA in combination are shown in Tables 13a, 13b, and 13c for white, black, Mexican American, and Hispanic students separately by law school.

As was true in the previous study, the tendency is for the standard errors to be larger for the white students than for the black students (35 of the 49 significantly different standard errors of estimate are larger for whites than for blacks) when they differ significantly. Even when standard errors are examined irrespective of significant differences, standard errors are larger for the white group about twice as often as they are larger for the black group. The standard error of estimate is a function of two variables, the standard deviation of the criterion score and the correlation between the predictor(s) and the criterion. There is a very strong relationship between the standard errors of estimate and the variance in first-year grades. These data are consistent with previous data in that within each school, the group having the lesser variance in first-year average also has the smaller standard errors of estimate.

The standard errors are fairly consistent within group within school regardless of the predictor or predictor combination used in the regression system. That is, they tend to be largest when UGPA alone is used to predict first-year average and smallest when the two predictors, UGPA and LSAT score, are used in combination.

Predicting First-year Averages

Concern about the magnitude of the validity coefficients is based in concern about how to most fairly and accurately evaluate test scores and undergraduate grade reports included in law-school application materials. One method to address the question of differential prediction is to determine how accurately LSAT scores, when combined with UGPA, predict performance in law school for minority law school students. Tables 14 and 15 present mean predicted grades for white, black, Mexican American, and Hispanic students and differences be-

Table 11

Comparison of Raw Regression Weights for White, Black, Hispanic, and Mexican American Subgroups

	Number of schools in which raw regression weights were larger for:								
Predictor(s)	Whites	Blacks	Sig.*	Whites	Hispanics	Sig.*	Whites	Mex. Am.s	Sig.*
LSAT	30	21	n.s.	5	8	n.s.	5	2	n.s.
UGPA	38	13	p<.01	4	9	n.s.	3	4	n.s.
LSAT, UGPA:									
LSAT	32	19	n.s.	7	6	n.s.	6	1	n.s.
UGPA	39	12	p<.01	4	9	n.s.	4	3	n.s.

* Source: Statistical Sign Test (Dixon & Mood, 1946)

Table 12a

Results from Gulliksen/Wilks Regression Tests for Whites and Blacks using LSAT, UGPA, and LSAT, UGPA in Combination

Law School	Number of Whites	Number of Blacks	LSAT			UGPA			LSAT, UGPA		
			Ha	Hb	Hc	Ha	Hb	Hc	Ha	Hb	Hc
1	22	165	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
2	69	202	n.s.	n.s.	n.s.	n.s.	n.s.	*	n.s.	n.s.	n.s.
3	370	65	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	*
4	586	97	n.s.	n.s.	*	**	(n.s.)	(*)	n.s.	n.s.	*
5	398	60	n.s.	n.s.	*	n.s.	**	(*)	n.s.	**	(**)
6	396	69	**	(n.s.)	(*)	**	(n.s.)	(*)	n.s.	n.s.	n.s.
7	924	130	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	**	(*)
8	418	52	n.s.	n.s.	**	n.s.	n.s.	*	n.s.	n.s.	n.s.
9	206	33	**	(n.s.)	(*)	n.s.	n.s.	*	n.s.	n.s.	n.s.
10	274	30	n.s.	n.s.	n.s.	n.s.	n.s.	*	n.s.	n.s.	n.s.
11	559	58	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	n.s.
12	963	98	*	(n.s.)	(*)	*	(**)	(*)	*	(n.s.)	(n.s.)
13	389	41	*	(n.s.)	(*)	n.s.	n.s.	*	*	(n.s.)	(n.s.)
14	483	47	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	n.s.
15	465	40	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	*
16	446	38	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	n.s.
17	339	36	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	*	(*)
18	395	32	*	(**)	(*)	n.s.	n.s.	*	*	(n.s.)	(n.s.)
19	902	76	**	(n.s.)	(*)	*	(n.s.)	(*)	**	(n.s.)	(*)
20	503	42	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	**
21	910	79	n.s.	n.s.	*	*	(n.s.)	(*)	n.s.	n.s.	n.s.
22	443	35	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	*
23	427	38	*	(n.s.)	(*)	*	(n.s.)	(*)	*	(n.s.)	(**)
24	511	45	*	(n.s.)	(*)	*	(n.s.)	(*)	*	(n.s.)	(n.s.)
25	592	46	**	(n.s.)	(*)	*	(n.s.)	(*)	**	(n.s.)	(**)
26	709	62	n.s.	**	(*)	n.s.	n.s.	*	n.s.	**	(*)
27	537	41	*	(n.s.)	(*)	*	(n.s.)	(*)	*	(n.s.)	(n.s.)
28	678	51	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	*
29	599	42	*	(n.s.)	(*)	*	(n.s.)	(*)	*	(n.s.)	(n.s.)
30	713	52	**	(n.s.)	(*)	**	(n.s.)	(*)	n.s.	n.s.	n.s.
31	618	43	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	n.s.
32	447	32	n.s.	**	(*)	n.s.	n.s.	*	n.s.	n.s.	*
33	628	40	**	(n.s.)	(*)	**	(n.s.)	(*)	**	(n.s.)	(n.s.)
34	540	34	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	n.s.
35	593	38	*	(n.s.)	(*)	n.s.	n.s.	*	**	(n.s.)	(n.s.)
36	736	46	n.s.	n.s.	**	n.s.	n.s.	*	**	(n.s.)	(n.s.)
37	648	38	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	n.s.
38	587	39	**	(n.s.)	(*)	n.s.	n.s.	*	n.s.	n.s.	**
39	619	37	n.s.	**	(*)	n.s.	n.s.	*	n.s.	**	(*)
40	837	46	n.s.	n.s.	n.s.	n.s.	**	(*)	n.s.	*	(n.s.)
41	665	35	n.s.	n.s.	*	n.s.	**	(*)	n.s.	n.s.	n.s.
42	940	50	n.s.	**	(*)	n.s.	n.s.	*	n.s.	**	(*)
43	927	55	*	(n.s.)	(**)	n.s.	n.s.	*	*	(**)	(n.s.)
44	590	31	n.s.	n.s.	*	**	(n.s.)	(*)	n.s.	**	(*)
45	735	36	*	(n.s.)	(*)	*	(n.s.)	(*)	*	(**)	(*)
46	836	43	n.s.	n.s.	**	n.s.	n.s.	*	n.s.	n.s.	n.s.
47	988	47	**	(n.s.)	(*)	n.s.	n.s.	*	n.s.	n.s.	n.s.
48	1013	53	n.s.	n.s.	*	n.s.	*	(*)	n.s.	**	(n.s.)
49	1231	59	n.s.	n.s.	*	n.s.	*	(ns.)	n.s.	**	(*)
50	1014	39	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	n.s.
51	1166	41	*	(n.s)	(*)	*	(n.s.)	(*)	*	(n.s.)	(**)

Note. ( ) denotes ambiguity due to significance of previous test
* $p < .05$, two tailed. ** $p < .01$, two tailed.

tween actual and predicted mean grades. Tables 14a, 14b, and 14c show actual and predicted first-year averages for each group separately by law school.

Predictions are made by applying the common multiple regression equation developed for the combined white group and minority group of focus to the data for each of the minority groups. That is, a regression equation based on data from white and black students is used to predict FYA for black students, a regression equation based on white and Hispanic students is used to predict FYA for Hispanic students, and similarly for Mexican American students. The calculations and comparisons are made using each school's own grading scale, but all of the first-year averages have been converted to a scale where the mean for total group is set to 50 and the standard deviation to 10 for reporting the results from this study. The conversion is made to preserve the confidentiality of the data and to allow comparisons across law schools. Although the results from the Gulliksen-Wilks analyses for the present study fail to confirm that the regression systems are identical for each group (minority and nonminority) at each school, the regressions estimated from the combined data are most similar to the ones that are most frequently used by the majority of law schools. Clearly, if data support the need to rely on separate regression systems, they easily could be produced when sample sizes are sufficiently large. However, the data used for this study reveal that among the 168 schools that participated

Table 12b

Results from Gulliksen/Wilks Regression Tests for Whites and Hispanics Using LSAT, UGPA, and LSAT, UGPA in Combination

Law School	Number of Whites	Number of Hispanics	LSAT			UGPA			LSAT, UGPA		
			Ha	Hb	Hc	Ha	Hb	Hc	Ha	Hb	Hc
6	396	41	**	(n.s.)	(**)	n.s.	n.s.	*	n.s.	n.s.	n.s.
7	924	41	*	(n.s.)	(*)	**	(n.s.)	(*)	*	(n.s.)	(*)
13	389	36	n.s.	n.s.	**	n.s.	n.s.	*	n.s.	n.s.	n.s.
24	511	31	*	(**)	(*)	n.s.	n.s.	*	*	(n.s.)	(n.s.)
26	709	32	n.s.	n.s.	**	n.s.	*	(*)	n.s.	**	(n.s.)
38	587	31	n.s.	n.s.	**	n.s.	n.s.	*	n.s.	n.s.	n.s.
43	927	210	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	**	(n.s.)
44	590	58	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	**	(*)
46	836	32	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
47	988	36	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
49	1231	47	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	n.s.
50	1014	37	n.s.	n.s.	n.s.	n.s.	n.s.	*	n.s.	n.s.	n.s.
52	194	47	n.s.	n.s.	n.s.	n.s.	n.s.	*	n.s.	**	(n.s.)

Note. ( ) denotes ambiguity due to significance of previous test
* $p < .05$, two tailed. ** $p < .01$, two tailed.

Table 12c

Results from Gulliksen/Wilks Regression Tests for Whites and Mexican Americans Using LSAT, UGPA, and LSAT, UGPA in Combination

Law School	Number of Whites	Number of Mex. Am.s	LSAT			UGPA			LSAT, UGPA		
			Ha	Hb	Hc	Ha	Hb	Hc	Ha	Hb	Hc
2	69	59	n.s.	n.s.	n.s.	n.s.	n.s.	**	n.s.	**	(n.s.)
21	910	31	n.s.	n.s.	*	n.s.	*	(*)	n.s.	n.s.	n.s.
46	836	34	n.s.	n.s.	*	**	(n.s.)	(*)	n.s.	n.s.	*
48	1013	47	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	**
49	1231	132	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	*
53	583	58	n.s.	n.s.	*	n.s.	n.s.	*	n.s.	n.s.	*
54	958	32	n.s.	n.s.	n.s.	n.s.	n.s.	*	n.s.	n.s.	n.s.

Note. ( ) denotes ambiguity due to significance of previous test
* $p < .05$, two tailed. ** $p < .01$, two tailed.

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Figure 1

Summary of Results from Gulliksen/Wilks Regression Tests

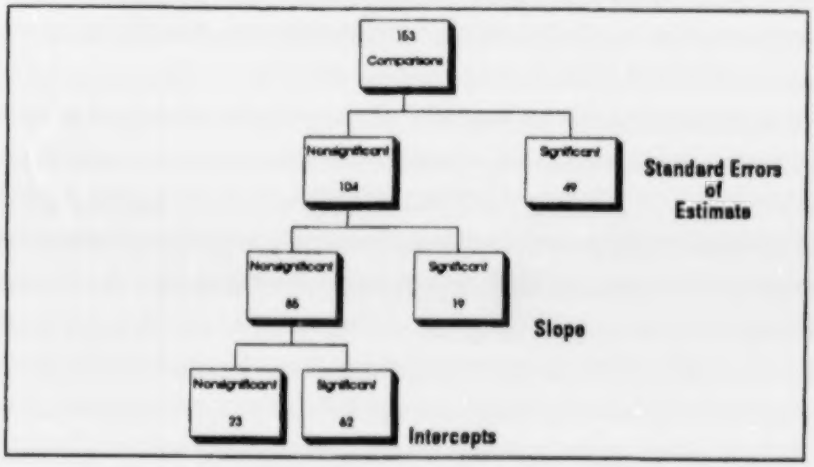
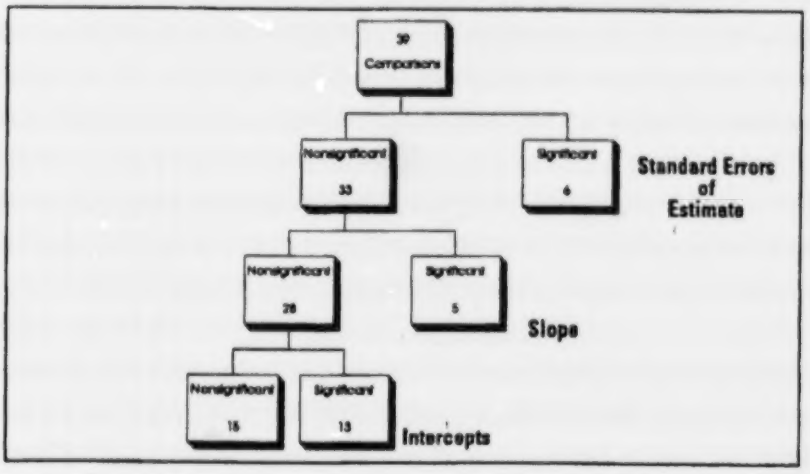


Figure 2

Summary of Results from Gulliksen/Wilks Regression Tests
for Whites and Hispanics Using LSAT, UGPA, and in Combination



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in the Correlation Studies from 1985-86 through 1987-88, even after combining data over three years, only 54 schools have data for a sufficiently large number of minority students to produce stable regression results for blacks, Mexican Americans, or Hispanics as a separate group.

A variant of the data presented in Tables 14a, 14b, and 14c is presented in Tables 15a, 15b, and 15c.

Tables 15a, 15b, and 15c show the differences between actual and predicted first-year average. The actual first-year average earned by the test taker is subtracted from the first-year average predicted from the multiple regression equation. A negative value means that the multiple regression equation underpredicted performance in law school; likewise, a positive difference means that the multiple regression equation overpredicted performance. These tables show that when predicted first-year average is estimated from a common regression equation based on data from the white and minority group, the regression equation tends to underpredict white performance and overpredict minority performance. The overprediction for each minority group is largest for UGPA alone and smallest for the combination of UGPA and LSAT scores. These results are consistent with those reported by Powers.

The data in Tables 14 and 15 are summary statistics averaged across all students. Average data do not hold for each individual test taker. Table 16 shows the number and percentage of individual students within each of the minority subgroups whose first-year average was overpredicted and underpredicted by the combination of LSAT score and UGPA.

These data confirm the conclusions about the accuracy of prediction suggested in Tables 14 and 15 but they highlight individual differences that are masked in the aggregate data.

Summary And Discussion

This study analyzes data from 54 law schools each of which enrolled 30 or more first-year students who identified themselves as a member of one of three minority groups—blacks, Mexican Americans, or Hispanics. The study is a replication of a 13-year-old study that uses LSAT scores that were earned on a previous version of the test and are reported on the old 200-800 scale. The present study, like the earlier one, was conducted to determine whether there exists evidence of differential validity and differential prediction for members of the different ethnic subgroups.

Initially, the study provides descriptive data comparing black, Mexican American, Hispanic, and white first-year law school students on LSAT score, undergraduate grade-point average, and first-year average in law school. Consistent with the earlier study, nonminority students on average earn higher scores on each of these measures than do their minority peers. This consistently lower performance by minority students on different predictors and on the criterion measure underscores the need for broad policy-based research on minorities in legal education.

Figure 3

Summary of Results from Gulliksen/Wilks Regression Tests for Whites and Mexican Americans Using LSAT, UGPA, and in Combination

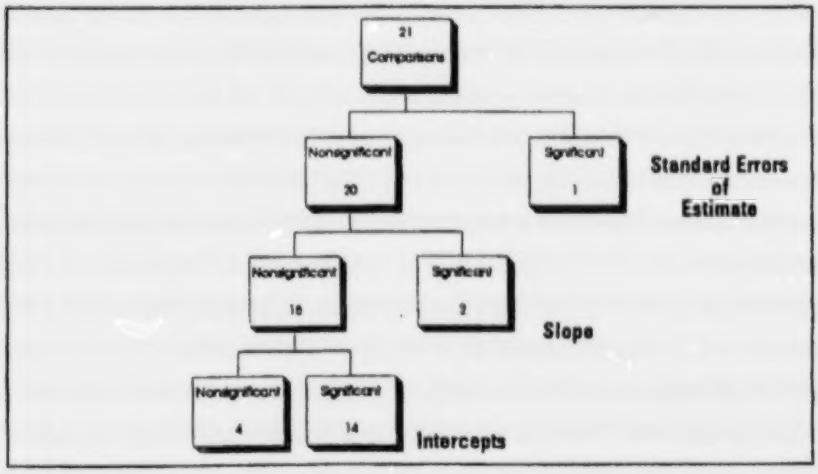

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Table 13a

Standard Errors of Estimate from Predicting FYA from LSAT, UGPA, and LSAT and UGPA in Combination for Whites and Blacks

Law School	Whites			Blacks		
	LSAT	UGPA	LSAT, UGPA	LSAT	UGPA	LSAT, UGPA
1	9.9	10.4	9.2	9.9	9.7	9.5
2	9.1	9.0	8.0	9.7	10.0	9.3
3	7.9	8.1	7.6	7.4	7.5	7.2
4	8.2	8.5	7.8	9.2	9.7	8.6
5	9.3	9.2	8.8	8.7	9.3	8.7
6	8.0	8.6	7.7	6.7	7.2	6.6
7	7.7	8.2	7.5	7.9	8.7	7.7
8	9.1	9.4	8.8	8.9	9.4	8.6
9	7.6	8.1	7.5	6.1	7.4	6.1
10	8.4	9.0	7.9	8.9	7.6	7.4
11	9.0	9.3	8.7	7.8	8.1	7.6
12	8.0	8.3	7.7	9.2	9.5	9.2
13	8.9	9.2	8.6	6.8	7.7	6.1
14	8.9	9.1	8.6	10.0	10.6	9.7
15	8.8	8.8	8.6	8.4	8.5	8.4
16	8.6	9.0	8.1	7.9	7.6	7.1
17	8.3	8.7	8.2	8.0	7.3	7.3
18	9.1	9.4	8.8	6.2	8.7	5.9
19	8.7	9.2	8.5	10.0	11.1	9.9
20	9.6	9.5	9.3	8.3	8.7	7.9
21	8.0	8.2	7.7	8.8	10.1	8.3
22	8.8	8.6	8.1	9.9	9.5	9.4
23	8.8	9.1	8.7	6.5	6.6	6.1
24	9.0	9.0	8.7	5.2	5.5	5.2
25	8.4	9.0	8.0	6.8	6.8	6.4
26	8.2	8.7	8.2	8.6	8.6	8.6
27	9.2	9.3	8.9	6.9	6.1	5.6
28	9.1	9.2	8.8	9.3	9.3	9.1
29	8.9	9.4	8.5	6.5	6.5	6.1
30	9.2	9.4	8.9	7.7	7.9	7.5
31	9.0	9.5	8.6	9.2	9.3	9.0
32	8.0	8.2	7.9	6.6	7.8	6.6
33	9.3	9.4	8.9	7.2	7.7	7.1
34	9.0	9.2	8.6	8.1	8.3	8.0
35	8.5	8.8	7.9	6.4	7.7	6.4
36	8.9	9.2	8.3	10.2	10.6	9.9
37	8.9	9.2	8.7	7.4	9.8	7.4
38	7.9	8.1	7.7	8.8	9.9	8.6
39	9.0	9.1	9.0	8.5	8.3	8.2
40	9.2	9.6	8.9	8.3	8.9	8.3
41	8.8	9.1	8.3	7.7	8.5	7.7
42	9.2	9.5	8.9	9.9	10.0	9.9
43	9.1	9.5	8.6	7.1	8.9	6.6
44	9.1	9.3	8.8	10.6	11.7	9.9
45	8.7	8.8	8.6	11.7	11.9	11.7
46	9.2	9.8	8.9	7.1	7.2	7.1
47	9.3	9.4	9.0	7.6	8.9	7.6
48	8.2	8.6	8.1	8.0	8.7	8.0
49	8.6	8.8	8.4	8.0	8.0	7.9
50	8.8	9.3	8.5	10.2	9.9	9.8
51	9.3	9.5	9.2	6.7	7.3	6.1

Validity coefficients are presented for white, black, Hispanic, and Mexican American students using first-year average in law school as the criterion variable and UGPA alone, LSAT alone, and UGPA and LSAT in combination. The validity data do not support the concern that the LSAT score or the traditional combination of LSAT score and undergraduate grade-point average are less valid for any of the minority groups than they are for the white group. The data suggest one exception. The use of UGPA alone as a predictor seems to be significantly less valid for black students than for white students. As expected, the data confirm that using the combination of LSAT and UGPA produces a higher validity coefficient than using either predictor alone for each of the subgroups studied. This is true for every school in the study. The data reported in this study, like the data reported in the Powers study, suggest that the lower validity coefficients for the nonminority group may be partially a consequence of greater restriction of range among white first-year students.

The regression systems for each of the paired groups—black/white, Hispanic/white, and Mexican American/white—are compared to determine the reasonableness of using a single equation based on the combination of the two groups. The results of these tests report few significant differences in slopes between the two groups, but a substantial number of differences in standard errors of estimate and in intercepts. Examination of the differences in standard error of estimate reveals that for the majority of significant differences, the standard errors are larger for the white students than for the students in any of the minority groups. The same trend is evident even among regressions systems that do not show significant differences. The large number of significantly different intercepts is consistent with earlier LSAT research (Schrader and Pitcher 1976a, 1976b; Powers, 1977). As was true for the earlier studies, the prediction bias that is a consequence of significantly different slopes and intercepts does not fit the traditional definition of prediction bias. That is, when differences in slope are observed, the

Table 13b

Standard Errors of Estimate from Predicting FYA from LSAT, UGPA, and LSAT and UGPA in Combination for Whites and Hispanics

Law School	Whites			Hispanics		
	LSAT	UGPA	LSAT, UGPA	LSAT	UGPA	LSAT, UGPA
6	8.0	8.6	7.7	6.5	7.7	6.4
7	7.7	8.2	7.5	10.0	10.1	9.6
13	8.9	9.2	8.8	9.2	8.5	8.1
24	9.0	9.0	8.7	6.4	8.3	6.1
26	8.2	8.7	8.2	9.2	8.1	7.5
38	7.9	8.1	7.7	8.7	9.7	7.7
43	9.1	9.5	8.6	8.9	9.4	8.2
44	9.1	9.3	8.8	9.6	9.7	9.5
46	9.2	9.8	8.9	10.5	9.8	8.6
47	9.3	9.4	8.5	10.0	9.8	9.4
49	8.6	8.8	8.4	8.0	9.3	7.4
50	8.8	9.3	8.5	9.5	9.5	8.4
52	8.3	9.3	7.7	7.0	8.0	6.7

Table 13c

Standard Errors of Estimate from Predicting FYA from LSAT, UGPA, and LSAT and UGPA in Combination for Whites and Mexican Americans

Law School	Whites			Mexican Americans		
	LSAT	UGPA	LSAT, UGPA	LSAT	UGPA	LSAT, UGPA
2	9.1	9.0	8.0	9.3	9.3	9.2
21	8.0	8.2	7.7	9.9	10.2	8.9
46	9.2	9.8	8.9	7.9	7.9	7.7
48	8.2	8.6	8.1	8.9	9.6	8.6
49	8.6	8.8	8.4	8.6	8.8	8.3
53	9.6	9.5	9.1	8.8	8.6	8.4
54	9.8	9.9	9.4	8.0	8.2	8.0

Table 14a

Actual and Predicted FYA for Whites and Blacks Using a Common Regression Equation

Law School	Whites				Blacks			
	Mean Actual FYA	Mean Predicted FYA using:			Mean Actual FYA	Mean Predicted FYA using:		
		LSAT	UGPA	LSAT, UGPA		LSAT	UGPA	LSAT, UGPA
1	52.7	50.7	50.2	51.4	49.6	49.8	49.9	49.8
2	55.0	53.6	49.8	54.2	47.9	48.4	49.8	48.2
3	52.5	51.6	50.5	52.1	36.0	40.9	47.1	38.3
4	51.9	51.3	50.5	51.5	40.3	43.8	48.9	42.6
5	51.1	50.6	50.1	50.8	42.7	45.7	49.0	44.6
6	53.2	52.8	51.7	53.1	40.2	42.3	49.1	40.8
7	52.4	51.9	51.1	52.2	36.6	40.5	46.2	38.5
8	51.0	50.7	50.5	50.8	45.0	47.6	49.3	46.5
9	53.9	53.4	53.0	53.7	37.9	41.3	43.9	39.2
10	51.2	51.1	50.2	51.1	40.4	41.4	50.0	41.7
11	51.2	50.8	50.5	51.2	38.4	42.5	45.7	38.9
12	51.6	51.1	50.6	51.4	34.0	39.0	44.4	36.1
13	51.9	51.4	50.7	51.7	38.2	42.4	48.1	39.7
14	51.3	51.1	50.5	51.2	38.4	40.9	46.7	38.6
15	51.5	50.9	50.4	51.3	33.7	40.1	45.7	36.1
16	51.3	50.8	50.6	51.1	38.7	44.2	48.5	40.8
17	52.7	52.0	52.0	52.3	38.7	45.4	45.7	42.3
18	50.9	50.5	50.1	50.8	36.7	43.6	48.6	40.4
19	51.1	50.7	50.4	50.9	39.8	45.2	48.4	43.1
20	51.0	50.5	50.3	50.8	40.0	45.8	48.1	42.5
21	52.0	51.6	51.2	51.9	35.5	40.2	44.1	36.3
22	51.2	50.8	50.2	50.9	36.4	41.1	48.9	39.4
23	51.8	51.4	51.1	51.6	38.8	41.8	45.1	38.9
24	52.1	51.7	51.2	52.0	36.7	41.5	47.0	37.9
25	51.2	50.9	50.5	51.1	37.2	41.3	46.0	39.3
26	52.0	51.5	51.2	51.7	36.7	43.4	46.6	40.4
27	51.3	50.9	50.6	51.2	37.7	42.5	46.7	38.4
28	51.0	50.5	50.3	50.7	38.5	45.1	48.2	42.7
29	50.9	50.6	50.1	50.8	37.6	41.2	48.2	39.0
30	51.2	50.8	50.5	51.0	38.1	42.7	47.9	39.7
31	50.7	50.4	50.3	50.6	41.5	45.7	47.3	43.0
32	52.2	51.6	51.1	51.9	31.6	39.1	46.3	35.6
33	50.7	50.4	50.2	50.7	39.2	43.9	46.7	39.5
34	50.8	50.6	50.2	50.7	36.2	40.3	46.5	37.7
35	51.5	51.2	51.0	51.5	36.7	41.1	44.6	36.4
36	50.7	50.5	50.2	50.6	41.1	44.0	48.5	42.9
37	50.9	50.6	50.4	50.8	38.0	42.9	47.1	40.3
38	52.6	52.3	51.8	52.5	35.0	39.9	46.6	36.7
39	51.5	51.1	50.6	51.2	36.3	41.9	50.0	40.7
40	50.4	50.3	50.2	50.4	44.5	46.3	48.7	45.3
41	51.0	50.7	50.5	50.9	37.7	43.1	47.1	40.1
42	50.9	50.7	50.5	50.7	41.0	46.3	50.1	45.8
43	50.7	50.5	50.2	50.6	40.8	43.4	49.3	42.1
44	51.2	50.8	50.6	50.8	38.9	46.0	50.0	45.0
45	51.5	51.1	50.8	51.2	36.5	45.2	50.0	42.0
46	50.8	50.7	50.6	50.7	45.2	47.8	49.6	46.5
47	50.8	50.6	50.5	50.7	41.9	45.6	48.8	43.9
48	52.4	52.1	51.9	52.3	38.1	43.0	48.0	39.1
49	52.0	51.7	51.5	51.9	36.6	43.6	47.7	39.0
50	51.0	50.8	50.6	50.9	37.2	40.5	47.5	38.1
51	50.8	50.7	50..5	50.7	37.6	43.1	48.5	40.6
Weighted Average	51.4	51.0	50.7	51.2	39.7	43.7	47.8	41.5

differences tend to be greater for white students than for minority students. Likewise, in the majority of cases, the intercept for the white students is greater than the intercept for minority students.

The consequence of these differences in slope and intercept are highlighted in the final section of the report, where differences between predicted and actual first-year performance are presented. The results from this study again are consistent with those reported by Powers. When a regression equation is developed using combined data from white and minority students, the equation tends to overpredict law school performance for minority students. There is nothing in these data to suggest that using the traditional predictors disadvantages minority law school applicants. Indeed, using a prediction system based only on minority student data would present a bleaker picture of minority applicants than is presented using the combined data. However, the data in this study also demonstrate that overprediction is not true for every applicant. The practical consequence of this observation is that admission committees need to continue to eval-

Table 14b

Actual and Predicted FYA for Whites and Hispanics Using a Common Regression Equation

	Whites				Hispanics			
		Mean Predicted FYA using:				Mean Predicted FYA using:		
Law School	Mean Actual FYA	LSAT	UGPA	LSAT, UGPA	Mean Actual FYA	LSAT	UGPA	LSAT, UGPA
6	53.2	53.0	52.3	53.1	42.8	45.2	51.7	44.2
7	52.4	52.2	52.1	52.3	44.9	69.1	51.8	48.7
13	51.9	51.6	51.3	51.7	44.6	48.0	51.2	47.0
24	52.1	51.7	51.6	51.9	41.6	47.1	50.2	44.0
26	52.0	51.9	51.7	51.9	44.7	48.0	51.3	47.0
38	52.6	52.4	52.3	52.6	44.5	47.7	50.9	45.5
43	50.7	50.8	50.5	50.6	50.4	49.9	51.4	50.8
44	51.2	50.7	50.6	50.7	44.6	49.0	50.6	48.9
46	50.8	50.7	50.7	50.8	47.8	49.4	50.0	48.7
47	50.8	50.8	50.7	50.8	48.0	47.8	50.7	47.6
49	52.0	51.8	51.7	51.9	42.9	47.6	50.2	44.8
50	51.0	50.9	50.7	50.9	44.0	45.2	50.3	44.7
52	52.8	52.7	51.8	52.8	46.9	47.4	51.2	46.8
Weighted Average	51.6	51.5	51.3	51.5	46.5	49.6	51.0	47.9

Table 14c

Actual and Predicted FYA for Whites and Mexican Americans Using a Common Regression Equation

	Whites				Mexican Americans			
		Mean Predicted FYA using:				Mean Predicted FYA using:		
Law School	Mean Actual FYA	LSAT	UGPA	LSAT, UGPA	Mean Actual FYA	LSAT	UGPA	LSAT, UGPA
2	55.0	54.6	53.4	55.0	51.2	51.6	53.1	51.1
21	52.0	51.8	51.6	51.9	38.9	42.3	48.7	38.8
46	50.8	50.6	50.5	50.6	43.0	47.9	49.9	47.3
48	52.4	52.1	51.9	52.3	38.0	43.7	49.4	40.3
49	52.0	51.5	51.2	51.8	40.4	44.8	48.2	41.8
53	50.8	50.4	50.3	50.5	45.6	48.9	50.3	48.6
54	50.6	50.5	50.5	50.6	45.7	48.0	50.3	47.1
Weighted Average	51.6	51.3	51.1	51.4	42.9	46.6	49.7	44.7

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Table 15a

Differences Between Actual and Predicted Mean FYA for Whites and Blacks

Law School	Whites			Blacks		
	Difference Between Mean Actual and Mean Predicted Using:			Difference Between Mean Actual and Mean Predicted Using:		
	LSAT	UGPA	LSAT, UGPA	LSAT	UGPA	LSAT, UGPA
1	-1.92	-2.50	-1.30	0.26	0.33	0.17
2	-1.38	-5.43	-0.83	0.47	1.85	0.28
3	-0.87	-1.95	-0.41	4.94	11.09	2.35
4	-0.58	-1.42	-0.38	3.51	8.59	2.31
5	-0.46	-0.94	-0.29	3.04	6.26	1.91
6	-0.36	-1.55	-0.09	2.04	8.89	0.51
7	-0.55	-1.35	-0.27	3.89	9.63	1.92
8	-0.33	-0.54	-0.18	2.63	4.34	1.48
9	-0.54	-0.96	-0.21	3.36	6.01	1.32
10	-0.11	-1.05	-0.14	1.02	9.58	1.25
11	-0.43	-0.76	-0.05	4.14	7.29	0.49
12	-0.50	-1.05	-0.21	4.95	10.36	2.03
13	-0.45	-1.15	-0.16	4.22	10.89	1.50
14	-0.14	-0.60	-0.02	2.47	8.27	0.20
15	-0.55	-1.03	-0.21	6.40	12.00	2.41
16	-0.47	-0.67	-0.18	5.48	7.84	2.06
17	-0.71	-0.74	-0.38	6.66	6.97	3.60
18	-0.39	-0.81	-0.14	4.87	9.94	1.71
19	-0.46	-0.73	-0.27	5.40	8.61	3.25
20	-0.48	-0.68	-0.21	5.79	8.09	2.51
21	-0.41	-0.75	-0.07	4.88	8.61	0.75
22	-0.37	-0.99	-0.24	4.70	12.47	3.06
23	-0.45	-0.74	-0.19	5.05	8.30	2.16
24	-0.42	-0.91	-0.10	4.79	10.29	1.16
25	-0.32	-0.68	-0.16	4.12	8.74	2.09
26	-0.58	-0.87	-0.33	6.70	9.89	3.73
27	-0.37	-0.69	-0.06	4.81	9.00	0.76
28	-0.49	-0.73	-0.32	6.56	9.65	4.21
29	-0.26	-0.75	-0.10	3.66	10.68	1.47
30	-0.34	-0.72	-0.12	4.64	9.81	1.62
31	-0.29	-0.40	-0.11	4.22	5.79	1.55
32	-0.54	-1.05	-0.29	7.52	14.70	4.03
33	-0.30	-0.48	-0.02	4.70	7.53	0.32
34	-0.26	-0.64	-0.09	4.07	10.23	1.46
35	-0.28	-0.50	0.02	4.36	7.84	-0.32
36	-0.18	-0.46	-0.11	2.88	7.40	1.79
37	-0.29	-0.53	-0.14	4.91	9.11	2.31
38	-0.33	-0.79	-0.12	4.90	11.85	1.78
39	-0.33	-0.82	-0.26	5.55	13.68	4.41
40	-0.10	-0.23	-0.05	1.84	4.18	0.83
41	-0.28	-0.49	-0.09	5.37	9.36	2.37
42	-0.28	-0.49	-0.26	5.31	9.19	4.85
43	-0.15	-0.50	-0.07	2.61	8.45	1.22
44	-0.37	-0.58	-0.32	7.12	11.12	6.09
45	-0.43	-0.66	-0.27	8.71	13.48	5.49
46	-0.12	-0.23	-0.07	2.40	4.40	1.37
47	-0.17	-0.33	-0.10	3.64	6.91	2.01
48	-0.26	-0.52	-0.05	4.88	9.88	0.99
49	-0.34	-0.53	-0.11	6.99	11.06	2.32
50	-0.12	-0.39	-0.03	3.25	10.25	0.88
51	-0.19	-0.38	-0.10	5.46	10.83	2.95
Weighted Average	-0.35	-0.71	-0.16	3.97	8.05	1.80

uate each individual on his or her complete application portfolio and cannot make generalizations about individual applications from aggregate data.

Further research needs to be done to identify differences between minority students who are underpredicted from those who are overpredicted. Previously mentioned research (Houston and Novick, 1987) suggests the possibility of important differences in the criterion prediction (e.g., prediction of first-year average) at different points along the predictor scale. There also may be less easily quantifiable differences among overpredicted and underpredicted performers that could and should be incorporated into the admission process.

Conclusions

Neither changes in the format and content of the LSAT nor changes in the overall population of first-year law school students resulted in changes in the findings from previous investigations of possible differential validity or differential prediction for the traditional predictors of success in the first year of

Table 15b

Differences between Actual and Predicted Mean FYA for Whites and Hispanics

	Whites			Hispanics		
	Difference Between Mean Actual and Mean Predicted Using:			Difference Between Mean Actual and Mean Predicted Using:		
Law School	LSAT	UGPA	LSAT, UGPA	LSAT	UGPA	LSAT, UGPA
6	-0.25	-0.92	-0.14	2.37	8.88	1.37
7	-0.19	-0.31	-0.17	24.19	6.90	3.80
13	-0.31	-0.61	-0.22	3.37	6.62	2.37
24	-0.33	-0.52	-0.14	5.52	8.55	2.38
26	-0.15	-0.30	-0.10	3.23	6.62	2.31
38	-0.17	-0.33	-0.05	3.17	6.34	0.94
43	0.11	-0.24	-0.09	-0.50	1.04	0.39
44	-0.43	-0.59	-0.42	4.41	5.95	4.23
46	-0.06	-0.09	-0.04	1.65	2.26	0.94
47	0.01	-0.10	0.01	-0.14	2.72	-0.33
49	-0.18	-0.28	-0.07	4.69	7.23	1.84
50	-0.04	-0.23	-0.02	1.11	6.27	0.61
52	-0.14	-1.04	0.01	0.57	4.29	-0.05
Weighted Average	-0.13	-0.33	-0.10	3.05	4.52	1.36

Table 15c

Differences between Actual and Predicted Mean FYA for Whites and Mexican Americans

	Whites			Mexican Americans		
	Difference Between Mean Actual and Mean Predicted Using:			Difference Between Mean Actual and Mean Predicted Using:		
Law School	LSAT	UGPA	LSAT, UGPA	LSAT	UGPA	LSAT, UGPA
2	-0.38	-1.65	0.03	0.44	1.93	-0.04
21	-0.18	-0.40	-0.06	5.34	11.79	1.86
46	-0.20	-0.28	-0.17	4.84	6.90	4.25
48	-0.26	-0.53	-0.10	5.68	11.35	2.26
49	-0.47	-0.84	-0.15	4.39	7.82	1.39
53	-0.33	-0.46	-0.30	3.30	4.66	2.99
54	-0.08	-0.15	-0.04	2.30	4.54	1.34
Weighted Average	-0.26	-0.48	-0.13	3.73	6.86	1.80

Table 16

Number and Percentage of Students Within Each Minority Group Whose FYA is Overpredicted and Underpredicted by LSAT, UGPA Using Combined White and Minority Data

Law School	Blacks				Hispanics				Mexican Americans			
	over	under	%over	%under	over	under	%over	%under	over	under	%over	%under
1	77	88	46.7	53.3								
2	111	91	55.0	45.0					29	30	49.2	50.8
3	38	27	58.5	41.5								
4	57	40	58.8	41.2								
5	33	27	55.0	45.0								
6	39	30	56.5	43.5	24	17	58.5	41.5				
7	75	55	57.7	42.3	27	14	65.9	34.1				
8	27	25	51.9	48.1								
9	17	16	51.5	48.5								
10	15	15	50.0	50.0								
11	28	30	48.3	51.7								
12	55	43	56.1	43.9								
13	25	16	61.0	39.0	25	11	69.4	30.6				
14	24	23	51.1	48.9								
15	24	16	60.0	40.0								
16	24	14	63.2	36.8								
17	25	11	69.4	30.6								
18	20	12	62.5	37.5								
19	46	30	60.5	39.5								
20	25	17	59.5	40.5								
21	35	44	44.3	55.7					18	13	58.1	41.9
22	22	13	62.9	37.1								
23	23	15	60.5	39.5								
24	23	22	51.1	48.9	21	10	67.7	32.3				
25	30	16	65.2	34.8								
26	42	20	67.7	32.3	21	11	65.6	34.4				
27	22	19	53.7	46.3								
28	34	17	66.7	33.3								
29	23	19	54.8	45.2								
30	32	20	61.5	38.5								
31	28	15	65.1	34.9								
32	25	7	78.1	21.9								
33	22	18	55.0	45.0								
34	18	16	52.9	47.1								
35	18	20	47.4	52.6								
36	22	24	47.8	52.2								
37	24	14	63.2	36.8								
38	22	17	56.4	43.6	17	14	54.8	45.2				
39	28	9	75.7	24.3								
40	24	22	52.2	47.8								
41	20	15	57.1	42.9								
42	25	15	62.5	37.5								
43	29	26	52.7	47.3	107	103	51.0	49.0				
44	24	7	77.4	22.6	41	17	70.7	29.3				
45	26	10	72.2	27.8								
46					20	12	62.5	37.5	23	11	67.6	32.4
47	30	17	63.8	36.2	16	20	44.4	55.6				
48	31	22	58.5	41.5					27	20	57.4	42.6
49	37	22	62.7	37.3	27	20	57.4	42.6	70	62	53.0	47.0
50	21	18	53.8	46.2	16	21	43.2	56.8				
51	29	12	70.7	29.3								
52	27	16	62.8	37.2					18	14	56.3	43.8
53					26	21	55.3	44.7				
54									40	18	69.0	31.0
Average	31.4	23.0	57.7	42.3	30.6	23.6	56.4	43.6	32.7	23.0	58.7	41.3

law school. The data do suggest important areas of further inquiry that should be pursued. For example, minority students continue to perform more poorly than white students not only on the predictors, but also on the criterion variable, first-year average. The predictor variables, especially the LSAT score need to be evaluated carefully to try to determine whether important diagnostic information can be extracted from the scores. Early identification of skills or academic preparedness that are lacking among selected minority applicants might lead to informed and eventually successful intervention programs.

Like the predecessor studies, this study relies on a regression-model-based definition of fairness in selection. That is, the prediction would be considered unfair if the regression equation consistently and systematically excluded members of an identifiable subgroup as a result of underpredicting the performance of its members. The observed absence of prediction bias and actual overprediction of minority performance suggests that, by this definition, differential validity is not a concern for the law school admission process. In his 1977 study, Powers suggests that alternative models of fairness should be explored using the rich LSAC Correlation Study database and, in fact, offers several models that might be considered. Given the consistency of the regression results from 1976 to 1987, it seems that further work on the question of selection bias that focuses on evaluating alternative models of fairness would be the most fruitful next step.

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